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ISO 5296-2 : 1989
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भारतीय मानक

तुल्यकलक चालन पट्टे — पट्टे

भाग 2 पिच कोड MXL और XXL — मीट्रिक आयाम

(पहला पुनरीक्षण)

Indian Standard

SYNCHRONOUS BELT DRIVES — BELTS

PART 2 PITCH CODES MXL AND XXL — METRIC DIMENSIONS

(First Revision)

ICS 21.220.10

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

August 2010 **Price Group 2**

Pulleys and Belts Sectional Committee, PG 29

NATIONAL FOREWORD

This Indian Standard (Part 2) (First Revision) which is identical with ISO 5296-2 :1989 'Synchronous belt drives — Belts — Part 2: Pitch codes MXL and XXL — Metric dimensions' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Pulleys and Belts Sectional Committee and approval of the Production and General Engineering Division Council.

This standard was originally published in 1981 based on ISO 5296 :1978 'Synchronous belt drive belts' which was subsequently revised into two parts. Similarly, this standard was also divided into two parts. Other part is:

Part 1 Pitch codes MXL, XL, L, H, XH and XXH — Metric and inch dimensions

With the publication of this standard, IS 9804 :1981 shall be withdrawn.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminology and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker in the International Standards while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shali be rounded off in accordance with IS 2 :1960 'Rules for rounding off numerical values ***{revised)'.The*** number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SYNCHRONOUS BELT DRIVES — BELTS

PART 2 PITCH CODES MXL AND XXL — METRIC DIMENSIONS

(First Revision)

1 Scope

This part of ISO 5296 specifies the principal characteristics of synchronous endless belts for use in synchronous belt drives1) for mechanical power transmission and where positive indexing or synchronization may be required.

The principal characteristics include

a) nominal tooth dimensions;

b) length and width dimensions;

c) tolerances on these dimensions;

d) length measuring specifications.

This part of ISO 5296 applies to synchronous belt drives having a pitch equal to 2,032 mm or 3,175 mm designated by the symbols MXL and XXL.

As far as the dimensions are concerned, belts with pitch code MXL are interchangeable with those of pitch code MXL in ISO 5296-1.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 5296. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 5296 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5296-1 : 1989, *Synchronous belt drives - Belts - Part 1: Pitch codes MXL, XL, L, H, XH and XXH - Metric and inch dimensions*

3 Pitch codes

The pitch code and corresponding belt pitch are given in table 1.

Table 1 — Pitch codes

Pitch code	Belt pitch*) mm
MXL	2,032
XXL	3,175

*) Carried to the third decimal place because belt pitch is a defined value.

4 Dimensions and tolerances

4.1 Tooth dimensions

The nominal belt tooth dimensions (see figure 1) are given in table 2.

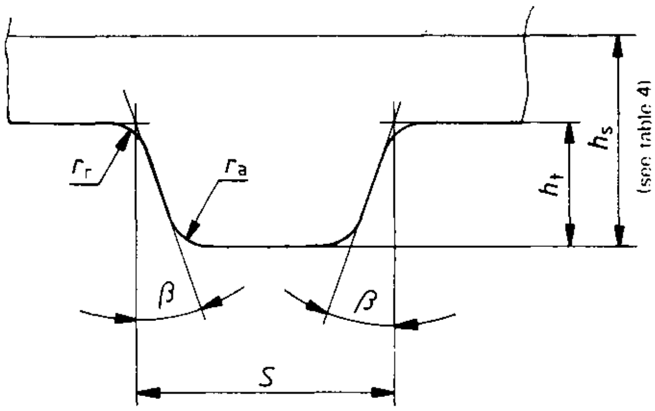

Figure 1 — Tooth profile

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1) Synchronous belt drives have been known by various titles in the past: for example, timing belt drives, positive belt drives, gear belt drives.

Table 2 — Nominal tooth dimensions

Dimensions in millimetres

Pitch code	2*fi* degrees	S	h_t	r_r	r_a
MXL	40	1,14	0,51	0,13	0,13
XXL	50	1,73	0,76	0,2	0,3

4.2 Lengths

The belt pitch lengths and tolerances are given in table 3.

Table 3 — Pitch lengths and tolerances

Dimensions in millimetres

Number of teeth		Pitch length	Tolerance
MXL	XXL		
45		91,44	±0,41
50	–	101,6	
55	–	111,76	
60	–	121,92	
–	40	127	
70		142,24	
75	48	152,4	
80	–	162,56	
–	56	177,8	
90	–	182,88	
100	64	203,2	
110	–	223,52	
–	72	228,6	
125	80	254	
–	88	279,4	±0,46
140	–	284,48	
–	96	304,8	
155		314,96	
	104	330,2	
175	112	355,6	
–	120	381	
200	128	406,4	±0,51
225	144	457,2	
250	160	508	
	176	558	±0,61

4.3 Widths and heights

The belt widths and tolerances, and the nominal heights, are given in table 4.

Table 4 — Widths and heights

Dimensions in millimetres

Pitch code	Nominal heights (see figure 1) h_s	Widths		Tolerance for belt width
		Dimension	Designation	
MXL	1,14	3,2 4,8 6,4	3,2 **4,8** **6,4**	+ 0,5 -0,8
XXL	1,52			

5 Belt designation

The belt designation consists of the letter B (for belt), the number of teeth, the pitch code and the width designation in millimetres.

EXAMPLE

A synchronous belt of 100 teeth, pitch code MXL (2,032 mm pitch) and belt width 4,8 mm is designated:

B 100 MXL 4,8

NOTE — The designation of this belt according to ISO 5296-1 is **80,0 MXL 019.**

6 Pitch length measurement

6.1 Measurement

The pitch length shall be determined in accordance with ISO 5296-1 : 1989, clause 5.

6.2 Measuring pulleys

The dimensions and tolerances of the pulleys for use in measuring belt lengths are given in table 5.

The appropriate minimum clearance, C_m, is shown in figure 2 and table 5.

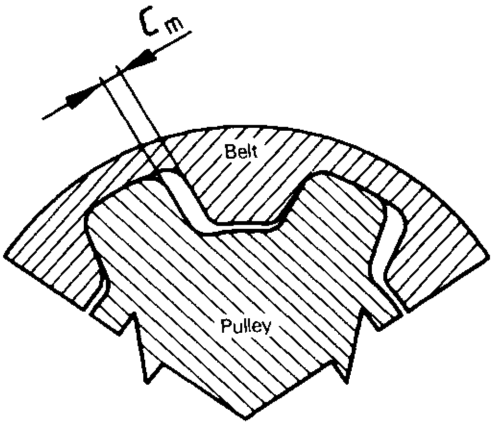

Figure 2 — Clearance between measuring pulley and belt

Table 5 — Belt pitch length measuring pulleys

Dimensions in millimetres

Pitch code	Number of teeth	Pitch circumference	Outside diameter ± 0,013	Radial run-out TIR[1]	Axial run-out TIR[1]	Minimum clearance C_m
MXL	20	40,64	12,428	0,013	0,025	0,25
XXL	16	50,8	15,662			0,3

1) Total indicator reading (maximum)

6.3 Total measuring force

The total forces to be applied for measuring belt pitch lengths are given in table 6.

Table 6 — Total measuring force

Belt width designation	Belt width	Force for pitch code MXL	Force for pitch code XXL
	mm	N	
3,2	3,2	13	14
4,8	4,8	20	22
6,4	6,4	27	31

Annex A

(informative)

Bibliography

ISO 5288 : 1982, *Synchronous belt drives — Vocabulary.*

GMGIPN—153 BIS/ND/10—300 Copies.

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This Indian Standard has been developed from Doc No.: PG 29 (1108).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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